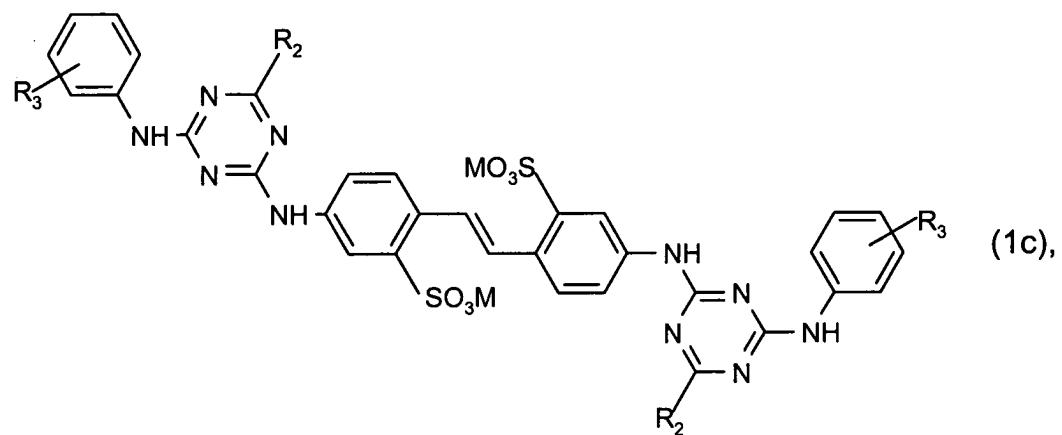
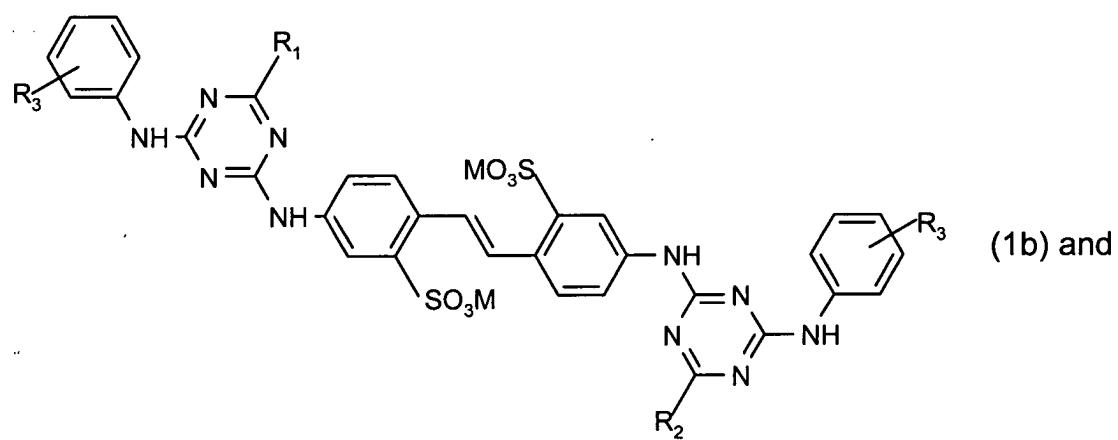
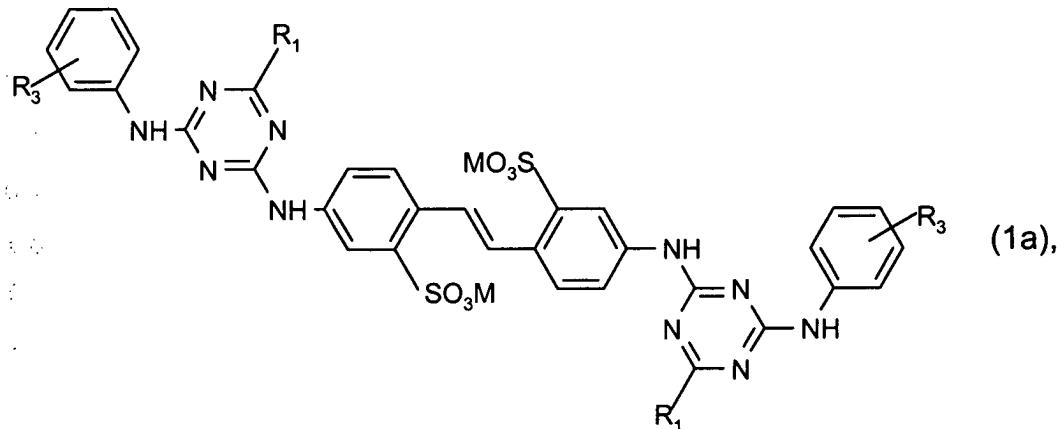


Claims

1. (currently amended) A fluorescent whitening agent, which comprises a mixture of two symmetrical compounds (1a) and 1(c) and one asymmetrical compound 1(b) compounds of the formulae



in which R₁ and R₂ are different and each

R₁ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄ hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄ hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue,

R₂ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄ hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄ hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue
or an amino acid or an amino acid amide residue from which a hydrogen has been removed from the amino group,

each R₃, independently, represents hydrogen, C₁-C₄alkyl or C₁-C₄alkoxy and

M represents hydrogen, an alkali metal atom, ammonium or a cation formed from an amine.

2. (original) A composition according to claim 1, in which R₃ represents hydrogen.

3. (previously presented) A composition according to claims 1, in which the aliphatic amino acid or amino acid amide residue is of the formula

-NR₄-CH(CO₂H)-R₄ (2) or -NR₄-CH₂CH₂CONH₂ (3),

in which each

R₄ and R₄, independently, represent hydrogen or a group having the formula

-CHR₅R₆ in which

R₅ and R₆, independently, are hydrogen or C₁-C₄alkyl optionally substituted by one or two substituents selected from the group consisting of hydroxy, thio, methylthio, amino, carboxy, sulfo, phenyl, 4-hydroxyphenyl, 3,5-diiodo-4-hydroxyphenyl, β-indolyl, β-imidazolyl and NH=C(NH₂)NH-.

4. (currently amended) A composition according to claim 3, in which residues R₄ and/or R₂ are derived from glycine, alanine, sarcosine, serine, cysteine, phenylalanine, tyrosine (4-hydroxyphenylalanine), diiodotyrosine, tryptophan (β-indolylalanine), histidine ((β-imidazolylalanine), α-aminobutyric acid, methionine, valine (α-aminoisovaleric acid), norvaline, leucine (α-aminoisocaproic acid), isoleucine (α-amino-β-methylvaleric acid), norleucine (α-amino-n-caproic acid), arginine, ornithine (α,δ-diaminovaleric acid), lysine (α,ε-diaminocaproic acid), aspartic acid (aminosuccinic acid), glutamic acid (α-aminoglutaric acid), threonine, hydroxyglutamic acid and taurine, as well as mixtures and optical isomers thereof, or from iminodiacetic acid or from N-(propionamido)-N-(2-hydroxyethyl)amine.

5. (currently amended) A composition according to claim 1, in which R_1 and R_2 represents $-NHC_2-$
 $C_4\text{hydroxyalkyl}$, $-N(C_2-C_4\text{ hydroxyalkyl})_2$, $-N(C_1-C_4\text{alkyl})(C_2-C_4\text{hydroxyalkyl})$, a morpholino residue or a
residue derived from glycine, sarcosine, taurine, glutamic acid, aspartic acid or iminodiacetic acid.

6. (currently amended) A composition according to claim 5 in which R_1 and R_2 represents a mono-
(2-hydroxyethyl)amino, a di-(2-hydroxyethyl)amino, a di-(2-hydroxypropyl)amino, an N-(2-
hydroxyethyl)-N-methylamino, an aspartic acid, an iminodiacetic acid or a morpholino residue.

7. (previously presented) A composition according to claim 1, in which M represents hydrogen,
lithium, potassium, sodium, ammonium, mono-, di-, tri- or tetra- $C_1-C_4\text{alkylammonium}$, mono-, di- or tri-
 $C_1-C_4\text{hydroxyalkylammonium}$ or ammonium that is di- or tri-substituted with a mixture of $C_1-C_4\text{alkyl}$
and $C_1-C_4\text{hydroxyalkyl}$ groups.

8. (original) A composition according to claim 7, in which M represents hydrogen, potassium or
sodium.

9. (currently amended) A process for the preparation of the compound mixture of formulae (1a), (1b)
and (1c) of claim 1 which process comprises by reacting, under known reaction conditions, cyanuric
chloride, successively, in any desired sequence, with each of 4,4'-diaminostilbene-2,2'-disulphonic
acid, aniline or an aniline derivative, an amino compound R_1H and an amino compound R_2H , or,
alternatively a mixture of amino compounds R_1H and R_2H , R_1 and R_2 being as defined in claim 1.

i) 4,4'-diaminostilbene-2,2'-disulphonic acid,

ii) aniline or aniline substituted by $C_1-C_4\text{alkyl}$ or $C_1-C_4\text{alkoxy}$,

iii) an amino compound R_1H and

iv) an amino compound R_2H

or, alternatively

i) 4,4'-diaminostilbene-2,2'-disulphonic acid,

ii) aniline or aniline substituted by $C_1-C_4\text{alkyl}$ or $C_1-C_4\text{alkoxy}$, and

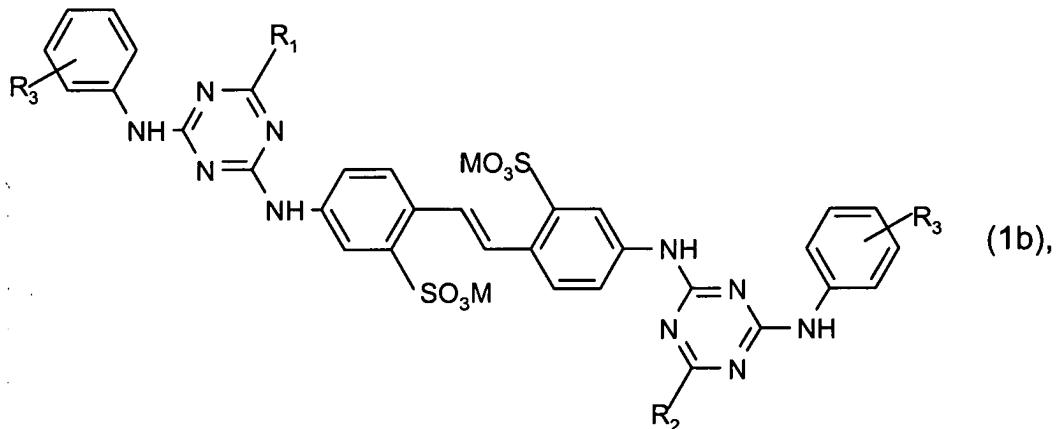
iii) a mixture of an amino compound R_1H and an amino compound R_2H

wherein R_1 and R_2 are different and

R₁ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue and

R₂ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue or an amino acid or an amino acid amide residue from which a hydrogen has been removed from the amino group.

10. (currently amended) A compound of the formula



in which

R₄, R₂, R₃ and M are as defined in claim 1.

R₁ and R₂ are different and

R₁ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue,

R₂ represents -NH₂, -NHC₁-C₄alkyl, -N(C₁-C₄alkyl)₂, -NHC₂-C₄hydroxyalkyl, -N(C₂-C₄hydroxyalkyl)₂, -N(C₁-C₄alkyl)(C₂-C₄hydroxyalkyl), a morpholino, piperidino or pyrrolidino residue or an amino acid or an amino acid amide residue from which a hydrogen has been removed from the amino group,

R₃ represents hydrogen, C₁-C₄alkyl or C₁-C₄alkoxy and

M represents hydrogen, an alkali metal atom, ammonium or a cation formed from an amine.

11. (previously presented) A composition for whitening synthetic or natural organic materials, which composition contains water, a fluorescent whitening agent comprising a mixture of the compounds

(1a), (1b) and (1c), according to claim 1, and, optionally, one or more auxiliaries selected from the group consisting of dispersants, water retention aids, biocides and adjuvants.

12. (previously presented) A method for adding optical brightening agents to paper which method comprises the step of applying a composition of claim 11 either to a paper substrate in a pulp mass, to a paper substrate in a size-press, to a paper substrate in a metering press or contacting a paper surface with a coating application comprising a composition of claim 11.

13. (withdrawn) Paper, which has been optically brightened by a fluorescent whitening agent according to claim 1.

14. (previously presented) A method, for increasing the Sun Protection Factor (SPF) rating or for the fluorescent whitening of a textile fibre material which method comprises the step of treating said textile fibre material with a composition of claim 11.

15. (withdrawn) A textile fabric produced from a fibre, which fibre is treated with the compound mixture of formulae (1a), (1b) and (1c) according to claim 1.

16. (new) A process according to claim 9, wherein cyanuric chloride is initially reacted with 4,4'-diaminostilbene-2,2'-disulphonic acid.

17. (new) A process according to claim 16, wherein cyanuric chloride is initially reacted with 4,4'-diaminostilbene-2,2'-disulphonic acid, followed by reaction with aniline or aniline substituted by C₁-C₄alkyl or C₁-C₄alkoxy and then with a mixture of amino compounds R₁H and R₂H.